

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Tomi HEINONEN <i>et al.</i>	Confirmation No.: 8670
Application No.: 10/825,575	Examiner: Rajan, Kai
Filed: April 15, 2004	Group Art Unit: 3769

For: PHYSIOLOGICAL EVENT HANDLING SYSTEM AND METHOD

Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed November 24, 2010.

I. REAL PARTY IN INTEREST

The real party in interest is Nokia Corporation, a corporation organized under the laws of Finland and having a place of business at Keilalahdentie 4, FIN-02150 Espoo, Finland. The above referenced patent application is assigned to Nokia Corporation.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF THE CLAIMS

Claims 1-23, 33-45, 47, 48, 50, and 51 are pending in this appeal, in which claims 24-32, 46, and 49 have earlier been canceled. No claim is allowed. This appeal is therefore taken from the final rejection of claims 1-23, 33-45, 47, 48, 50, and 51 on August 25, 2010.

IV. STATUS OF AMENDMENTS

All amendments to the claims have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed invention addresses problems associated with handling physiological events that may be generated by a physiological monitor. Specifically, when a person with a monitor which monitors certain physiological conditions either malfunctions or detects a problem with the patient, the person may not be able to contact appropriate emergency personal. The problem is solved by having the monitor send a first general emergency broadcast signal identifying the monitor and its location, and having mobile event handling devices that are within range of the monitor, and therefore receive the first signal, transmit a second signal to emergency personal.

Independent claim 1 provides for the following:

1. A method, comprising:

determining to receive at a mobile wireless event handling device, a first signal via a first network, from a monitoring device, the first signal comprising at least a general broadcast emergency signal and including information corresponding to physiological parameters

and an identification of the monitoring device (See, e.g., Specification ¶¶ [0014], [0015], [0021], [0022], Figs. 1 and 2, elements 100 and 200); and
determining to transmit, at the mobile wireless event handling device, to a target, a second signal via a second network, the second signal including at least information corresponding to the identification of the monitoring device (See, e.g., Specification ¶¶ [0019], [0020], Figs. 1 and 2, elements 200, 300, and 400).

Independent claim 12 provides for the following:

12. A system for handling an event, comprising:

a monitoring device configured to convey information relating to one or more physiological parameters, the monitoring device being further configured to transmit a signal via a first network, the signal comprising at least a general broadcast emergency signal and including information corresponding at least to an identification of the monitoring device (See, e.g., Specification ¶¶ [0014], [0015], [0021], [0022], Figs. 1 and 2, element 100);
and
a mobile wireless event handling device configured to receive signals from the monitoring device including information corresponding to the identification of the monitoring device, the mobile wireless event handling device being further configured to transmit a signal to a target, the signal including information corresponding to the identification of the monitoring device via a second network (See, e.g., Specification ¶¶ [0019], [0020], Figs. 1 and 2, element 200).

Independent claim 33 provides for the following:

33. An apparatus comprising:

at least one processor (See, e.g., Specification ¶ [0029], Fig. 2, element 220); and

at least one memory including computer program code for one or more programs (See, e.g., Specification ¶¶ [0030] and [0031], Fig. 2, element 200),

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,

determine to receive signals via a first wireless network, the signals comprising at least a general broadcast emergency signal and including information corresponding to a physiological parameters and an identification of a monitor (See, e.g., Specification ¶¶ [0021] and [0029]-[0030], Fig. 2, element 210); and

determine to transmit signals to a target, the signals including at least information corresponding to the identification of the monitor via a second network (See, e.g., Specification ¶¶ [0032] and [0033], Fig. 2, elements 250 and 280).

Independent claim 39 provides for the following:

39. A computer-readable storage medium having a program product recorded thereon, the program product comprising machine readable program code for causing a mobile wireless event handling device to perform the following steps:

determining to receive a first signal in the mobile wireless event handling device from a monitor, the first signal comprising at least a general broadcast emergency signal and including information corresponding to physiological parameters and an identification of the monitor See, e.g., Specification ¶¶ [0021] and [0029]-[0030], Fig. 2, element 210); and

transmitting a second signal via a second network to a target, the second signal including at least information corresponding to the identification of the monitor (See, e.g., Specification ¶¶ [0032] and [0033], Fig. 2, elements 250 and 280).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claim 39 is statutory under 35 U.S.C § 101?

Whether claims 1, 3-12, 14-23, 33-39, 41-45, 47, 48, 50, and 51 are anticipated under 35 U.S.C § 102(b) by *Russek* (US 5,319,355)?

Whether claim 40 is obvious under 35 U.S.C. § 103 based on *Russek*?

Whether claims 2 and 13 are obvious under 35 U.S.C. § 103 based on *Russek* in view of *Haller et al.* (US 2002/0052539)?

VII. ARGUMENT

A. CLAIM 39 IS STATUTORY UNDER 35 U.S.C. § 101 BECAUSE A COMPUTER READABLE STORAGE MEDIUM IS A TANGIBLE OR NON-TRANSITORY COMPUTER READABLE MEDIUM.

The Office Action (page 4) states that “a claim to a computer readable medium under the broadest reasonable interpretation, is broad enough to read on a carrier wave, and must be included on a *tangible* or *non-transitory* computer readable medium.” However, claim 39 reads, “A computer readable storage medium.” A carrier wave is not a storage medium. Carrier wave is defined in Newton’s Telecom Dictionary, 25th Edition as “the radio frequency wave generated at a transmitting station for the purpose of carrying the modulated frequency wave. Carrier waves are a form of analog signal that is used to encode information. The coding used to impress information on the wave can be a function of the frequency (the number of waves or cycles per

second) or amplitude (height) of the waves or cycles.” Nothing in the definition of carrier waves teaches or suggests storage. Therefore, claim 39 does not read on a carrier wave.

Accordingly, the Honorable Board is respectfully requested to reverse the Examiner’s rejection of claim 39 as being non-statutory, as the claimed computer readable storage medium is a tangible or non-transitory computer readable medium and falls within 35 U.S.C. § 101.

B. CLAIMS 1, 3-12, 14-23, 33-39, 41-45, 47, 48, 50, AND 51 ARE NOT ANTICIPATED OVER RUSSEK, BECAUSE RUSSEK FAILS TO DISCLOSE “DETERMINING TO RECEIVE AT A MOBILE WIRELESS EVENT HANDLING DEVICE” A “FIRST SIGNAL COMPRISING AT LEAST A GENERAL BROADCAST EMERGENCY SIGNAL.”

To anticipate a patent claim, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001); *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

A prior art reference anticipates a patent claims if it discloses every limitation of the claimed invention, either explicitly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). “Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *MEHL/Biophile Int’l Corp. v. Milgram*, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999).

Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent. *Georgia Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1331, 52 USPQ2d 1590, 1598 (Fed. Cir., Nov. 1, 1999); see also *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579, 34 USPQ2d 1673, 1679 (Fed. Cir. 1995) (holding that

claim term found in different claims must be interpreted consistently); *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 632, 3 USPQ2d 1109, 1113 (Fed. Cir. 1987.) (holding that a term used in one claim had the same meaning in another claim).

Well-settled case law holds that the words of a claim must be read as they would be interpreted by those of ordinary skill in the art. *In re Baker Hughes Inc.*, 215 F.3d 1297, 55 USPQ2d 1149 (Fed. Cir. 2000); *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); M.P.E.P. 2111.01. “Although the PTO must give claims their broadest reasonable interpretation, this interpretation must be consistent with the one that those skilled in the art would reach.” *In re Cortright*, 165 F.3d 1353, 1369, 49 USPQ2d 1464, 1465 (Fed. Cir. 1999).

The Office Action (page 2) asserts that the master alarm control units of *Russek* are mobile devices because they can be moved about to different locations in a hospital. Applicants agree that the master alarm control units of *Russek* appear to movable. However, a “mobile device” is generally accepted to mean more than merely a device that is movable. Specifically, “mobile device” is used to refer to handheld devices, or handheld computers, such as cell phones, smart phones, personal digital assistants, pagers, and personal navigation devices. (See, for example, the attached entry from Wikipedia.) Further, in Newton’s Telecom Dictionary, 25th Edition, the entry for “mobile” states that “the industry is now preferring the term mobile to describe a cell phone.” In *Russek*, there is no indication that the master alarm control unit is a handheld device. Accordingly, *Russek*’s master alarm control unit is not a mobile device, as recited in the claims.

In addition, the Office Action (pages 2-3) asserts that *Russek* discloses a general broadcast emergency signal, as the signal sent from patient sensors to a master control unit may

be received by multiple master control units (because the control units are linked by a network and may share information). The Office Action states, “Since the signal is receivable by more than one receiver, the signal is ‘general,’ and is not directed toward one specific recipient, but rather the recipient located in the area of alarm transmission.” Further, the Office Action states that a general broadcast meaning a broadcast sent to unspecified recipients is inconsistent with paragraph 0021 of the specification which “states that mobile event handling devices comprise software enabling event handling capabilities. Therefore, there is a degree of specificity regarding the intended recipients of the signal.”

It is agreed that only certain mobile devices are equipped to process the general broadcast signal in the particular manner claimed and disclosed, i.e., to transmit to a target a second signal via a second network wherein the second signal includes information corresponding to the identification of the monitoring device. However, the specification does not preclude the general broadcast signal from being received by other mobile devices. In fact, the general broadcast signal may be received by any mobile devices in the area, but only those with special processing capabilities will notify emergency services. On the other hand, the signal sent by a patient’s monitoring device in *Russek* is actually targeted for the assigned master alarm control unit. Although other master alarm control units may access information that has been received by the one, the signal is sent to/targeted for the one that is assigned to that patient or that monitoring device. When the patient is moved, either the master control unit is moved as well, or the patient’s information is sent to another master control unit and the monitor is reassigned. There is no indication in *Russek* that the signal is sent to multiple units. Even if the signal in *Russek* is sent specifically to multiple master alarm control units. Therefore, the signal is a targeted signal, not a general broadcast signal, as claimed.

Accordingly, the Honorable Board is respectfully requested to reverse the Examiner's rejection of claims 1, 3-12, 14-23, 33-39, 41-45, 47, 48, 50, and 51 under 35 U.S.C. § 102, because *Russek* does not disclose the limitations of the claim.

C. CLAIM 40 IS NOT RENDERED OBVIOUS BY *RUSSEK* BECAUSE THERE IS NO MOTIVATION TO MODIFY *RUSSEK* TO INCLUDE "A MOBILE WIRELESS EVENT HANDLING DEVICE" OR A "FIRST SIGNAL COMPRISING AT LEAST A GENERAL BROADCAST EMERGENCY SIGNAL".

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision always rests upon the Examiner. *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997); *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993); *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970).

Obviousness rejections require some evidence in the prior art of a teaching, motivation, or suggestion to combine and modify the prior art references. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001); *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

The Patent Office must give specific reasons why one of ordinary skill in the art would have been motivated to combine the references. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55

USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 218 USPQ 769 (Fed. Cir. 1983). A prior art reference must be considered in its entirety including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

If a proposed modification would render the prior art being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The Administrative Procedures Act (APA) mandates the Patent Office to make the necessary findings and provide an administrative record showing the evidence on which the findings are based, accompanied by the reasoning in reaching its conclusions. See *In re Zurko*, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001); *In re Gartside*, 203 F.3d 1305, 1314, 53 USPQ2d 1769, 1774 (Fed. Cir. 2000). In particular, the Patent Office must articulate and place on the record the “common knowledge” used to negate patentability. *In re Zurko*, *id.*; *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002).

As indicated *supra*, *Russek* fails to disclose “a mobile wireless event handling device” or the first signal being a “general broadcast emergency signal. Further, there is no teaching or suggestion in *Russek* to modify the master alarm control unit to be a mobile device (i.e., a handheld device). Since the master alarm control unit is preferably located at a nurse’s station, or can be located in the emergency room, the skilled artisan would expect the master alarm control unit not to be handheld, as a handheld device could easily be misplaced and could be

difficult for all to see. Further, a control unit at a nurse's station would be expected to include information regarding many patients, and, therefore, would need to be relatively large to display all the information.

In addition, there is no teaching or suggestion in *Russek* to make the emergency signal a general broadcast signal. The signal in *Russek* is specifically targeted for the master control units within the hospital. There would be no reason to send out a signal that could be received by other devices in the hospital and/or devices outside the hospital, as the master control units are expected to keep track of the patients and to notify anyone that needs the patients' information.

Accordingly, the Honorable Board is respectfully requested to reverse the Examiner's rejection of claim 40 under 35 U.S.C. § 103, because *Russek* does not disclose the limitations of the claim.

D. CLAIMS 2 AND 13 ARE NOT RENDERED OBVIOUS BY *RUSSEK* AND *HALLER ET AL.* BECAUSE *HALLER* PROVIDES NO MOTIVATION TO MODIFY *RUSSEK* TO INCLUDE "A MOBILE WIRELESS EVENT HANDLING DEVICE" OR A "FIRST SIGNAL COMPRISING AT LEAST A GENERAL BROADCAST EMERGENCY SIGNAL".

As explained supra, *Russek* fails to disclose or suggest a mobile wireless event handling device or a general broadcast emergency signal. The Examiner refers to *Haller* for a suggestion to use an implanted monitor instead of an external monitor, as disclosed by *Russek*. However, although *Haller* discloses a communication module 100/mobile phone 110 for receiving a signal from a patient's monitor, there is no teaching or suggestion in *Haller* to make a master control unit in a hospital (such as that disclosed by *Russek*) a mobile device. Further, the signal sent by the patient's monitor in *Haller* is targeted for a particular communication module 100/mobile phone 110. Therefore, *Haller* provides no teaching or suggestion to make the signal sent by the monitor a general broadcast signal. Since neither reference teaches or suggests "determining to

receive at a mobile wireless event handling device” a “first signal comprising at least a general broadcast emergency signal,” neither does the combination thereof.

Accordingly, the Honorable Board is respectfully requested to reverse the Examiner’s rejection of claims 2 and 13 under 35 U.S.C. § 103, because *Russek* and *Haller* do not disclose the limitations of the claims.

VIII. CONCLUSION AND PRAYER FOR RELIEF

For the foregoing reasons, Appellants request the Honorable Board to reverse each of the Examiner’s rejections.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

November 24, 2010
Date

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IX. CLAIMS APPENDIX

1. A method, comprising:

determining to receive at a mobile wireless event handling device, a first signal via a first network, from a monitoring device, the first signal comprising at least a general broadcast emergency signal and including information corresponding to physiological parameters and an identification of the monitoring device; and

determining to transmit, at the mobile wireless event handling device, to a target, a second signal via a second network, the second signal including at least information corresponding to the identification of the monitoring device.

2. The method of claim 1, wherein the monitor is an implant.

3. The method of claim 1, wherein the monitor is configured to detect, sense, or measure the physiological parameters.

4. The method of claim 1, wherein the monitor is configured to stimulate, intervene, or control physiological functions affecting the physiological parameters.

5. The method of claim 1, wherein the physiological parameters relate to heart function.

6. The method of claim 1, wherein the physiological parameters relate to brain function.

7. The method of claim 1, wherein the first signal and the second signal are wireless signals.

8. The method of claim 7, wherein the first network and the second network are wireless communication networks.

9. The method of claim 8, wherein the second network is a cellular network.

10. The method of claim 1, further comprising:

processing the first signal prior to transmitting the second signal.

11. The method of claim 10, wherein processing further comprises:

verifying a source of the first signal;

identifying an event associated with the first signal and related to the physiological parameters; and

determining the target for the second signal.

12. A system for handling an event, comprising:

a monitoring device configured to convey information relating to one or more physiological parameters, the monitoring device being further configured to transmit a signal via a first network, the signal comprising at least a general broadcast emergency signal and including information corresponding at least to an identification of the monitoring device; and

a mobile wireless event handling device configured to receive signals from the monitoring device including information corresponding to the identification of the monitoring device, the mobile wireless event handling device being further configured to transmit a signal to a target, the signal including information corresponding to the identification of the monitoring device via a second network.

13. The system of claim 12, wherein the monitoring device is implanted in a human body.

14. The system of claim 12, wherein the monitoring device is configured to detect, sense, or measure the physiological parameters.

15. The system of claim 12, wherein the monitoring device is adapted to stimulate, intervene, or control physiological functions affecting the physiological parameters.

16. The system of claim 12, wherein the physiological parameters relate to heart function.

17. The system of claim 12, wherein the physiological parameters relate to brain function.

18. The system of claim 12, wherein the monitoring device is configured to transmit wireless signals.

19. The system of claim 12, wherein the monitoring device is configured to transmit a signal when one or more physiological parameters satisfies a predetermined criteria.

20. The system of claim 12, wherein the monitoring device is configured to transmit signals on a substantially continuous basis.

21. The system of claim 12, wherein the mobile wireless event handling device is configured to transmit signals when one or more physiological parameters satisfies a predetermined criteria.

22. The system of claim 12, wherein the mobile wireless event handling device is configured to transmit wireless signals via a second network.

23. The system of claim 12, wherein the mobile wireless event handling device comprises:
a data processing module adapted to verify a source of signals received, the data processing module being further configured to identify an event associated with received signals and to determine the target for transmitted signals.

24-32. (Canceled)

33. An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one

processor, cause the apparatus to perform at least the following,

determine to receive signals via a first wireless network, the signals comprising at least a

general broadcast emergency signal and including information corresponding to a

physiological parameters and an identification of a monitor; and

determine to transmit signals to a target, the signals including at least information

corresponding to the identification of the monitor via a second network.

34. The apparatus of claim 33, wherein the monitor is configured to detect, sense, or measure the physiological parameters.

35. The apparatus of claim 33, wherein the monitor is configured to stimulate, intervent, or control physiological functions affecting the physiological parameters.

36. The apparatus of claim 33, wherein the transmitting module is configured to transmit signals when one or more physiological parameters satisfies a predetermined criteria.

37. The apparatus of claim 33, wherein the signals are wirelessly transmitted via the second network.

38. The apparatus of claim 33, wherein the apparatus is further caused to:

verify a source of the received signals;

identify an event associated with the signals; and

determine the target for the transmitted signals.

39. A computer-readable storage medium having a program product recorded thereon, the program product comprising machine readable program code for causing a mobile wireless event handling device to perform the following steps:

determining to receive a first signal in the mobile wireless event handling device from a monitor, the first signal comprising at least a general broadcast emergency signal and including information corresponding to physiological parameters and an identification of the monitor; and

transmitting a second signal via a second network to a target, the second signal including at least information corresponding to the identification of the monitor.

40. The method of claim 1, wherein the second signal further includes identification of the mobile wireless event handling device.

41. The method of claim 1, wherein the monitoring device comprises a broadcast communication device.

42. The method of claim 1, wherein the general broadcast emergency signal is received by all mobile wireless event handling devices within communication range of the monitoring device.

43. The method of claim 42, wherein the mobile wireless event handling devices are equipped with at least minimal event handling capabilities for receiving the general broadcast emergency signal.

44. The method of claim 1, wherein the mobile wireless event handling device includes at least minimal event handling capabilities for receiving the general broadcast emergency signal.

45. The system of claim 12, wherein the general broadcast emergency signal is received by all mobile devices within communication range of the monitoring device and being equipped with at least minimal event handling capabilities.

46. (Canceled)

47. The method of claim 1, wherein the first signal further includes information conveying location of the monitoring device.

48. The system of claim 12, wherein the signal further includes information conveying location of the monitoring device.

49. (Canceled)

50. The device of claim 33, wherein the signal further includes information conveying location of the monitoring device.

51. The computer-readable storage medium of claim 39, wherein the signal further includes information conveying location of the monitoring device.

X. EVIDENCE APPENDIX

Appellants are unaware of any evidence that is required to be submitted in the present Evidence Appendix.

XI. RELATED PROCEEDINGS APPENDIX

Appellants are unaware of any related proceedings that are required to be submitted in the present Related Proceedings Appendix.

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distances (e.g., the fifth floor is not directly—without having to take any engineer the connective radio-to bandwidth bandwidth is fixed, who's in real estate, then a modern carrier hotel called building. See also Broker, Colaborator and also Wireless.

Five digit numbers used by telephone carriers (CISX). The 500 plus the area code and called by dialing either 101XXXX, 102, or 950XXXX, which is the 100 used to dial around the carrier. See 101XXXX, 950XXXX.

A scheme that allows a full duplex to send and receive separate frequencies. Traditionally, for the uplink and downlink, the carrier is the same frequency by filtering out an odd tone transmitted from that same carrier. The transmitter on one end and an omnidirectional receiver for the downlink signal in the other end of the link keep the carrier from the inbound

See SS7 parameter. See

Now how largely implemented capabilities in North America, known as Feature Group B, other names that have been plan. See Feature Group

ing carrier suppression is

transmission formed to help with implementing 800 numbers. Standards Association (see carrier), long distance

any carrier. A carrier line is

in use on the network. Carrier

line of 1996 was passed

to other phone companies

to use services such as DSL

to use carrier locked into

the equipment was, later,

the space to be composed

you could locate your

with any carrier. You

can use undesired variables

to use California Public Utili-

ties telephone companies,

connected to any customer

providing such service within their franchise territory.

carrier portal A network operator's branded portal, where customers can manage and services.

carrier power (of a Radio Transmitter) The average power supplied to the antenna transmission line by a transmitter during one full power cycle taken under the condition of no modulation. Does not include pulse modulation or frequency-shift keying.

carrier provided loop A local phone line owned by a long distance company that is resold as part of a NANI service. This is generally separated from long distance service, the same way local calls are.

carrier select keys Buttons at the bottom of a telephone used to dial a long distance carrier.

carrier selection Is a result of Judge Greene's Modified Final Judgment which led to the breakup of the Bell System, most local phone companies offer their customers (business and home) the opportunity to select which long distance company they would like to use on a "primary" basis. That means they will dial 1+ (one plus) you get that carrier. To use any other long distance company you have to dial more digits, e.g. 1-4288 (the AIRS). See NANI.

carrier sense In a local area network, a PC or workstation uses its network card to detect if another station is transmitting. See CSMA.

carrier sense multiple access CSMA In local area networking, CSMA is a way of getting onto the LAN. Before starting to transmit, personal computers on the LAN "listen" to make sure no other PC is transmitting. Once CSMA figures out that no other PC is transmitting, it sends a packet and then uses the line for other PCs to transmit. With CSMA, though stations do not wait until the medium is clear, collisions still occur. Two alternative versions CSMA/CA and CSMA/CD attempt to reduce both the number of collisions and the severity of their impact. See CSMA/CA and CSMA/CD.

carrier sense multiple access/collision avoidance CSMA/CA A protocol that requires the PC to sense if another PC is transmitting before it begins transmitting. Under CSMA/CA, a data station that intends to transmit sends a jam signal, after waiting a sufficient time for all stations to pick up the jam signal, it sends a transmission frame, if while transmitting, it detects another station's jam signal, it stops transmitting for a designated time and tries again. For a longer explanation see CSMA/CA and Ethernet.

carrier sense multiple access/collision detection CSMA/CD Ethernet network control scheme. It is a contention access control scheme. It "listens" to incoming traffic to avoid data collisions. The Ethernet LAN uses CSMA/CD, it waits a small amount of time and then tries again. For a longer explanation see CSMA/CD and Ethernet.

carrier serving area CSA The geographic area served by a PSTN Switched Telephone Network (CD) (Central Office). The CSA generally is designed to have a radius of 12,000 feet. It is the geographical portion of a carrier center which will be provided with customer facilities primarily via digital carrier systems.

carrier shift 1 A method of keying a radio carrier for transmitting binary data or teleprinter signals, which consists of shifting the carrier frequency down for a marking signal and in the opposite direction for a spacing signal.

carrier shift 2 In amplitude modulation, a condition resulting from imperfect modulation whereby the positive and negative excursions of the envelope pattern are unequal, thus effecting a change in the power associated with the carrier. There can be positive or negative carrier shift.

carrier signal A continuous waveform (usually electrical) whose properties are capable of being modulated or impressed with a second information-bearing signal. The carrier itself conveys no information until altered in some manner, such as having its amplitude changed (amplitude modulation), its frequency changed (frequency modulation) or its phase changed (phase modulation). This changes convey the information.

carrier synchronization In a radio receiver, the generation of a reference carrier with a phase closely matching that of a received signal.

carrier system A system where several different signals can be com-

bined onto one carrier by changing some feature of the signals transmitting them (modulation), and then converting the signals back to their original form (demodulation). Many information channels can be carried by one broadband carrier system. Common types of carrier systems are frequency division, in which each information channel occupies an assigned portion of the frequency spectrum; and time division, in which each information channel uses the same medium medium for periodic assigned time intervals.

carrier terminal The modulation, demodulation and multiplex equipment used to combine and separate individual channels at the ends of a transmission system.

carrier to noise ratio (C/N) In radio receivers, the ratio, expressed in decibels, of the level of the carrier to that of the noise in the receiver bandwidth before any nonlinear process such as amplitude limiting and detection takes place.

carrier transitions Carrier transitions appear on a serial link whenever there is an interruption in the carrier signal (such as an interface reset or the remote end of a link). Another example of a carrier transition is with frame relay. The keepalive frames are too far apart, causing the line protocol to go down but the frame pipe stays up.

carrier wave A carrier wave is the radio frequency wave generated at a transmitting station for the purpose of carrying the modulated frequency wave. Carrier waves are a form of analog signal that is used to encode information. The coding used to impress information on the wave can be a function of the frequency (the number of waves or cycles per second) or amplitude (height) of the waves or cycles. See PCM, TDM.

Carrier-to-Interference Ratio C/I The ratio of the amplitude of a radio frequency carrier to the amplitude of any form of interference including both noise and other undesired carriers. The C/I is a broader measure than C/N (Carrier-to-Noise Ratio) because it includes undesired radio frequency carriers.

Carrier-to-Noise Ratio C/N The ratio of the amplitude of a radio frequency carrier to the amplitude of background noise.

carrierband Same as single-channel broadcast. See also Carrier Band.

Carrierless Amplitude and Phase CAP A noncoherent technology that can be used in ADSL systems, CAP is a variation of Quadrature Amplitude Modulation (QAM). With CAP, the POTS upstream and downstream channels are supported by splitting the frequency spectrum. CAP was the first ADSL noncoherent to be commercially deployed, but Discrete Multitone (DMT) was selected as the standard.

carrier's carrier A carrier's carrier is a company that provides telecommunications services to interexchange carriers or telephone companies. A carrier's carrier does not provide service to the public and therefore is subject to fewer regulations.

CARS Cable Television Relay Service, a microwave service authorized by Part 78 of the FCC Rules for the purpose of transmitting signals intended for carriage over a cable television system. Back in the days when "CATV" stood for Community Antenna Television, "CARS" stood for Community Antenna Relay Service. Over the years, "CATV" has evolved to mean Cable Television, but CARS remains CARS.

Carson's Rule A radiocommunications term. Carson's Rule is a method of estimating the bandwidth of an FM (Frequency Modulation) subcarrier system. It is commonly used in satellite systems in order to ensure that a high-fidelity, stereo TV picture will be delivered over a subcarrier TV channel. Variation of Carson's rule results in a higher video signal-to-noise ratio, at the expense of shedding in fast-moving scenes, sharpness of picture, and loss of audio fidelity. Carson's rule states that $B = 2(f_m + \Delta f)$, where B is the bandwidth, f_m is the peak deviation of the carrier frequency, and Δf is the highest (maximum) frequency in the modulating subcarrier signal.

Carterfone A device for connecting a two-way mobile radio system to the telephone network invented by Thomas Carter. It was electrically connected to the base station of the mobile radio system. Its electrical parts were housed in a bakelite. When someone on the radio wanted to speak on a "landline"

MMF Multi-Mode Fiber. Due to its relatively thick inner core (25-200 microns), MMF allows light signals to travel in many modes (i.e., physical paths). Some portions of light pulses travel more or less down the center of the inner core; some disperse (i.e., spread out) and strike the edges of the core, at which point they are reflected back into the core by the cladding; and some actually enter the cladding and travel through it to the core before they re-enter the core. Some paths are longer than others. The longer the path, the longer the time it takes to travel it. So, some portions of a light pulse arrive at the receiver before some other portions. This phenomenon of "modal dispersion" results in "pulse dispersion," which is the distortion, or smearing, of the individual pulses. There are two types of MMF: step-index fiber and graded-index fiber. MMF usage largely is restricted to applications in LANs and FDDI (Fiber Distributed Data Interface), both of which are characterized by relatively short distances and relatively low speeds. Single Mode Fiber (SMF), which has a thinner core, is used on long haul, high speed applications. See also FDDI, Graded-Index Fiber, SMF and Step-Index Fiber.

MMFD Abbreviation for micromachined, one millimeter of a forest, the unit of measuring capacitance.

MMI 1. Man Machine Interface.

2. Machine Machine Interface. The former is more common.

MMIC Microwave Monolithic Integrated Circuit.

MMITS Modular Multifunction Information Transfer System. Hiding behind something called the MMITS Forums is a group of people working to define solid-state programmable radios. There are two areas of emphasis:

Handheld - working with being able to download software into cellular handsets so they can work with a variety of air interfaces.

Mobile - concentrating on military requirements initially, but looking at the needs of public safety (Police, Fire, etc.) for the future.

The basic idea is to bring PC concepts to the radio world by moving the Digital/Analog - Analog/Digital function very close to the antenna, and do all of the tuning, spread/discrete, modulation/demodulation, etc. with DSPs. www.mmitsforum.org

MMJ A six wire modular jack with the locking tab shifted off to the right hand side. Used in the DEC wiring system.

MMML Man Machine Language.

MMTSP 1. Multimedia over IP.

2. Multimedia mail over IP.

MMR Modified Modified Read data compression method used in newer Genoa 3 localbus machines.

MMS 1. Material Management System.

2. Multimedia Messaging Service. A service that allows cell phone users (who are so equipped) to send pictures, move clips, cartoons and other graphic materials from one cell phone to another. According to a press release from Singapore's Singtel, an announcement of MMS - "With MMS, Singtel Mobile's postpaid customers can send photos and pictures with integrated text and voice clips from their MMS mobile phones to another mobile phone. Recipients will get on MMS message, if they are using MMS phones, or an SMS notification to retrieve the MMS message via the Internet or email. MMS messages can also be sent directly to email addresses."

MMSI See Maritime Mobile Ship Identity.

MMSI Modular Mobile Service Unit.

MMTA Multi-Media Telecommunications Association. The successor organization to NATA. MMTA was originally organized around five divisions - computer telephony integration, conferencing/collaboration and messaging, LAN/WAN interworking, Voice/Multimedia and Wireless Communications. MMTA is a 202,296-9000. In November, 1994 MMTA announced its intent to merge with TIA, another Washington organization called Telecommunications Industry Association.

On December 15, 1997 MMTA announced that it had been officially combined into the Telecommunications Industry Association. The combination of all these organizations reflected the fact that the telecommunications industry had become competitive, thus degrading many of Washington organizations of their reason for existing. See also www.tiaonline.org. See ACTAS and NATA

MMU Memory Management Unit. Circuitry that manages the swapping of blocks of memory.

MMUSIC Multirary Multimedia Session Control. A Working Group (WG) of the IETF (Internet Engineering Task Force), the MMUSIC is charged to develop Internet standards track protocols to support Internet teleconferencing sessions.

MMUSIC's current focus is on supporting loosely controlled conferences on the MBone, although the protocol are ensured to be general enough to be used in managing tightly-controlled conferences on any IP-based network. Among its accomplishments are the RFCs for RealTime Stream Protocol (RTSP), Session Announcement Protocol (SAP), Session Description Protocol (SDP), Session Initiation Protocol (SIP), and Simple Conference Control Protocol (SCCP). See also SIP.

MMVF A format of rewritable DVD disc proposed by NEC. It stands for Multi Media Video File. For a longer explanation, see DVD-RAM and DVD.

MNA Multinational Network Applications.

MNA7 Multiple CSS7 Network Addresses.

MNC Mobile Network Code. A part of the IMSI (International Mobile Subscriber Identity) or LSI.

mnemonic From the Greek mnemonikos, a shorthand label or term that is easy to remember. A mnemonic is a symbolic representation of an address (e.g., ATL for Atlanta, or LLS for Dallas) or operator code (e.g., JMP for jump). Acronyms are a type of mnemonic. LASER, for instance, is shortened for Light Amplification by Stimulated Emission of Radiation. See also Acronym.

mnemonic dial plan Pronounced "mnemonic." A way of dialing using characters typed on the keyboard of a terminal. The word Mnemonic comes from the same roots as memory. It's a memory pegging way of remembering something, like a way to lead. See Mnemonic Prompts.

mnemonic prompts System commands represented by the appropriate alphabet letter rather than by a number, (for example, "P" to "Play," "A" to "Answer"). See Mnemonic Dial Plan.

MNLP Mobile Network Location Protocol.

MNP 1. Microcam Networking Protocol.

2. Mobile Number Portability.

MNP10-EC Error correction protocol for twofold communications environments, like cellular networks. Use of MNP10-EC helps prevent disruptive signal fading and reduces the number of dropped calls that occur when you try trying to send data over cell networks. See Microcam Networking Protocol for a greater explanation.

MNRP Mobile Network Registration Protocol.

MO See Mographia Optic Drive.

moontone An on-air ringtone for a mobile phone.

Moobesting Mobile audio podcasting using a phone-in blogging service, such as AudioLink. See podcasting.

mobl A new top-level domain for websites whose content is customized for the small screens of mobile devices, like cellphones.

mobile In North America, the original term for a telephone that worked with cellular service was cell phone. In the rest of the world it was called a "mobile." Eventually America caught up and the industry is now preferring the term mobile to describe a cell phone. The technical term - i.e. what you find in the industry literature - is Mobile Station.

Mobile 2.0 The next generation of mobile web services. (see definition). It is used more specifically to refer to the adoption of web 2.0 services for use on mobile devices. This means developing versions of social networking sites, wikis and user-generated content sites for mobile phones and PDAs.

Mobile 3.0 A blanket term referring to future web services and apps for mobile devices such as cell phones. See Mobile 2.0.

mobile ad hoc network MANET. I haven't seen much in the way of actual products. But a 1999 IEEE paper by S. Cosca of the University of Maryland and J. Macker of the Naval Research Laboratory contained the following words: "The vision of mobile ad hoc networking is to support robust and efficient operation in mobile wireless networks by incorporating routing functionality into mobile nodes. Such networks are envisioned to have dynamic,

sometimes rapidly-changing, topology of relatively community, routing "mobile IP" technology,

where a node Internet other than be directly physically connected via a mobility (or some) enhancements

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Mobile device

From Wikipedia, the free encyclopedia

See also: Portable communications device

A **mobile device** (also known as a **handheld device**, **handheld computer** or simply **handheld**) is a pocket-sized computing device, typically having a display screen with touch input and/or a miniature keyboard. In the case of the personal digital assistant (PDA) the input and output are often combined into a touch-screen interface. Smartphones and PDAs are popular amongst those who require the assistance and convenience of certain aspects of a conventional computer, in environments where carrying one would not be practical. Enterprise digital assistants can further extend the available functionality for the business user by offering integrated data capture devices like barcode, RFID and smart card readers.

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Types

Mobile devices have been designed for many applications and include:

- Mobile computers
 - Mobile internet device
 - Mobile internet
 - Personal digital assistant/enterprise digital assistant
 - Calculator
 - Handheld game console
 - Portable media player
- Digital still camera (DSC)
- Digital video camera (DVC or digital camcorder)
- Mobile phone
- Pager
- Personal navigation device (PND)

Usage

Handheld devices have become ruggedized for use in mobile field management situations to record information in the field. They are used to achieve a variety of tasks for increasing efficiency that include digitizing notes, sending and receiving invoices, asset management, recording signatures, managing parts and scanning barcodes. Handheld computers used at work have molded over time into a variety of form factors, including smartphones on the low end, handheld PDAs, Ultra-Mobile PCs and Tablet PCs. Laptops do not come under handheld computers as they are not small enough to hold in one's hand.

See also



A mobile handheld device.

- Converged device
- List of emerging technologies
- Wikipedia:Help about reading and editing using mobile devices

External links

- Bluebird Pidion Mobile Computer

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